

May 22, 1923.

1,456,048

H. P. BARR

BRICK

Filed June 24, 1918

2 Sheets-Sheet 2

Fig. 4.

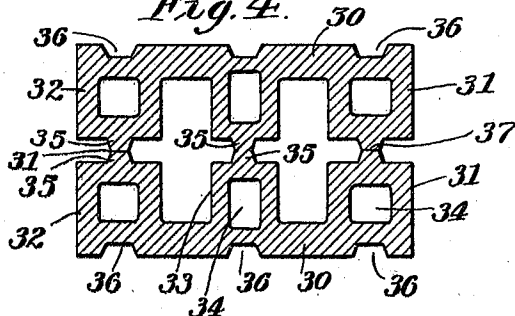


Fig. 5.

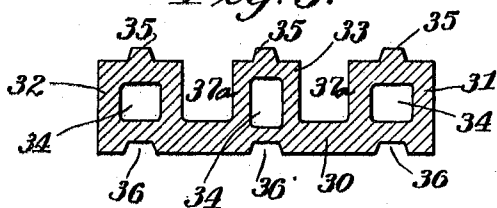
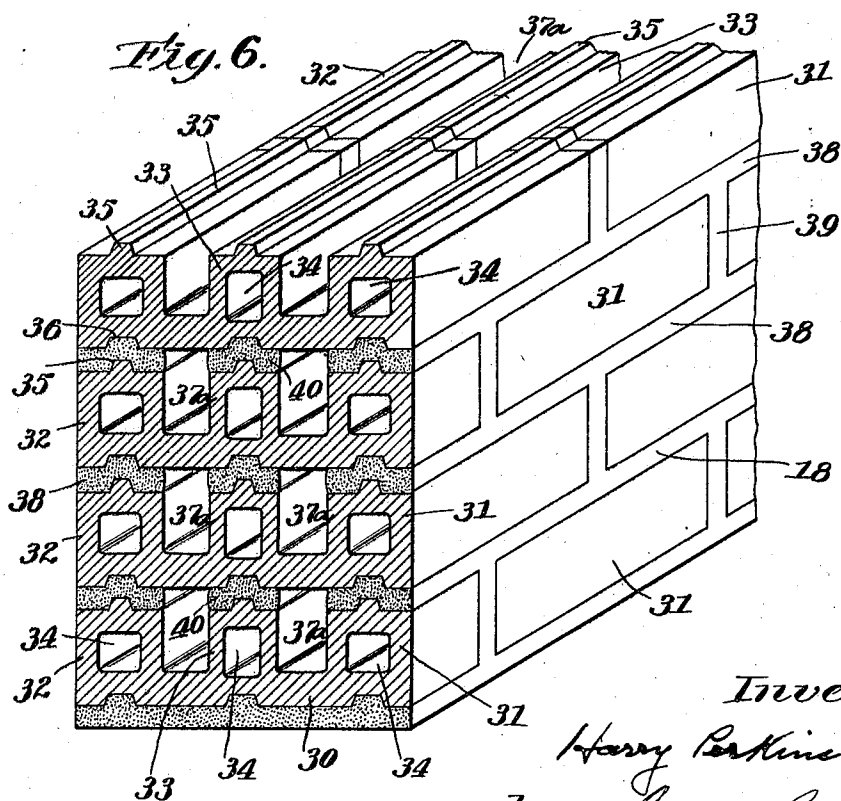


Fig. 6.



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BRICK.

Application filed June 24, 1918. Serial No. 241,531.

To all whom it may concern:

Be it known that I, HARRY P. BARR, a citizen of the United States, and resident of East Orange, in the county of Essex and State of New Jersey, have invented an Improvement in Brick, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

My present invention is a hollow wall of novel type, great strength, and with a plurality of open channels interrupting horizontal mortar courses through the wall, and novel types of building units adapted to interlock with standard sized common brick at corners or other points in the wall.

Important features of my present invention consist in a building unit and wall construction built therefrom, wherein a plurality of load-carrying vertically extending wall sections are employed, giving great strength and rigidity to the wall and forming a plurality of open channels, viz, two, each channel interrupting the horizontal mortar course between adjacent rows of my type of building unit, thus providing a double means for insuring moistureproofness and temperatureproofness from one wall face to the other. The hollow wall embodying my invention presents triple rows of load-carrying wall sections, the inner and outer sections respectively being cored to save weight and material, and the intermediate or third wall section being also cored, these three sections being united by a horizontal web constituting the body portion of each brick, and forming with said three wall sections the two open air channels.

Numerous advantages are secured by the present invention. In manufacturing the channel brick of my present type, the brick can be made as a duplex block, having the end wall sections wire cut for ready separation after drying and burning, with the central or intermediate wall section uncut. This advantage enables the duplex block to retain its form while plastic and during drying and kiln burning, and yet to be quickly and easily separated into two individual channel brick, by a single chisel action at the central wall section, instantly separating the two brick. Furthermore, the central wall section is of substantial size, giving a perfect and convenient "hand hold" to the

mason when laying such brick into a wall, permitting handling of my type of channel brick with a minimum of effort and therefore facilitating building operations. An additional feature of the broad central wall section is that it affords a firm and proper bearing surface to be fitted, slid, and positioned in alinement with the wall, enabling the mason with his hand pressing upon the central wall section, to firmly seat the channel brick in position on the mortar courses prepared for it, settling it into shape and forcing the same down, squeezing out the mortar to desired thinness and compressing the mortar courses into recesses or around projections where these are employed. This broad hand hold and pressure receiving central section, therefore, is of special value in actual work. My channel brick with the triple wall sections and double air channels can be built either side up, i. e., with the open air channels extending upwardly and closed by the body portion of the next channel brick, or with the air channels opening downwardly and closed by the lowermost channel brick; the outer faces also may be interchangeable, so that the mason will lose no time in picking out successive brick for building.

Additional important features in the present invention, consist in the saving of mortar, together with the great strength of my completed wall, and the multiplicity of open air channels interrupting the mortar courses, as well as the adaptability of this channel brick for all uses wherein common and face brick of standard types and sizes are employed, interlocking with such common brick at piers, corners, and other desired positions, and the important fact that my brick can be economically made in the ordinary type of die machine as a continuous process, wire cutting the same, stacking, drying and kiln burning, like ordinary brick, while giving a maximum of strength with a minimum of clay material and mortar in the completed wall structure.

Referring to the drawings illustrating preferred embodiments of the invention,

Fig. 1 is a cross-sectional view of a double brick or duplex block, as the same comes from the die;

Fig. 2 is a cross-sectional view of the single channel brick ready for use;

Fig. 3 is a perspective view of a wall sec-

tion, showing the same in fragmentary form and in cross-section;

Figs. 4, 5 and 6 are corresponding views of a duplex block in cross-section, single brick in cross-section and perspective wall section, showing a modified form, illustrating an interlocking projection and recess on each wall section, the embodiment of the invention illustrated in Figs. 1, 2 and 3 showing a mortar recess or interlock on each middle wall section only.

Referring to the drawings, I prefer to make the channel brick of Figs. 1, 2 and 3, double, forcing the same through a die of suitable form, wherein each brick has the horizontal web or body portion 1 carrying the wall sections 2, 3 and 4, said wall section being cored as shown at 5, 6 and 7 respectively. To form these three wall sections comparatively large cored recesses 10, 10, are made in a double brick, resulting in the open channels 9, 9, in each single brick. I desire also, in this form of channel brick, to provide mortar interlocking recesses 11, in the body portion 1, of each brick, and similar mortar recesses 12, these recesses 11 and 12, being in alinement and central of the middle wall section 3. To this end it may also be desirable to form the cored opening 6 of slightly less size in the central wall section 3, than the cored openings 5 and 7 in the outer wall sections 2 and 4 respectively. In forcing the clay through the die, it is also desirable to completely sever the outer wall sections by stringing a wire from the cores forming the openings 10, 10, through to the die, thus completely cutting the two brick on the line 13—13 as shown, giving a smooth open mortar bed 14, 14, on the top of each outer wall section. As the clay is plastic during this process of formation, it immediately reunites after passing the cutting wire, sufficiently to remain in cohesion during the hacking, drying and kiln burning processes. The central webs uniting the middle sections 3, 3, at either side of the recess 12, are left in integral relation, and hold the two brick together in its duplex form, these webs being scored slightly as shown at 15, 15. Consequently, after the brick is transported to the place of building, a single blow with a wide chisel on the scoring 15, 15, separates each brick which breaks evenly on the wire cut lines 13, and scoring 15, leaving the slightly projecting ribs, 16, 16, and the mortar recesses 17—the latter one-half being the central recess 12—on the central or middle wall section 3.

As shown in Fig. 3, the resulting wall structure built of these channel brick gives a strong, rigid, load-carrying wall of hollow wall-sections with a plurality of air channels 9, 9, as well as the plurality of cored openings 5, 6, and 7 transversely

throughout each layer in the wall. The horizontal mortar courses 18, and vertical mortar 19, in each wall face are interrupted by the two air channels 9, 9, the central mortar course 20, upon the middle wall section, giving an interlock which will retain adjacent courses of channel brick in proper alinement, locking them against displacement and with all three sections bearing their proper proportion of compressive strain and load in the wall. A minimum of mortar, it will be noted, is employed, the mason easily and quickly laying a ribbon of mortar along the beds 14 of each outer wall section and along the recess 17 and ribs 16, 16, of the central wall section, in one brick, and thereupon holding the next superimposed brick by the large hollow wall section 3 as a hand hold, positioning it on the mortar, "settling" it firmly and solidly in place with the heel of the hand securing a good hold on the flat ribs 16, forcing the entire brick into place, squeezing the central mortar ribbon 20 up into the recess 11, alining the brick and working it into place with comparatively slight effort, and without undue exertion or injury to the hands and without the necessity of tapping the brick wall with his trowel which masons desire to avoid if possible. My improved block, therefore, can be built into a wall with great speed, and without wearing out the masons, or exhaustive labor. The narrow air spaces 9, 9, are as effective in interrupting the mortar courses 18, as if they were of great width and the provision of a double set of such air spaces insures the double protection against any possibility of moisture driving through my improved wall. The hollow wall sections eliminate all waste of mortar and yet give a sufficiently firm bed of appropriate dimensions to receive, retain, and afford an efficient mortar bond throughout each section.

In Figs. 4, 5 and 6 I have illustrated a modified form, wherein I also employ three wall sections united by a body portion 30, the outer sections being numbered respectively 31 and 32 and the inner or middle section 33. Each of these wall sections is cored as shown at 34. On each wall section I provide an interlocking lug 35, preferably projecting upwardly from the top of the wall section, and I also form a corresponding recess 36, preferably in the body portion 30, these lugs and recesses being in alinement so as to afford a positive interlocking construction in the completed wall, as shown in Fig. 6. By forming this type of channel brick with the lugs 35 connecting, as shown in Fig. 4, I protect such lugs during the processes of manufacture and transportation, until the double block is ready to be split and the individual channel brick used in actual work. To this end,

also, I may wire cut the outer pairs of lugs on the line 37 as also clearly shown in Fig. 4, leaving the central pairs of lugs 35 united, to hold the double block in assembled position, in a similar manner to that already mentioned in connection with the channel brick shown in Figs. 1, 2 and 3. This type of brick presents the double open channels 37^a, 37^a, and the triple wall sections, and can be built into a wall either side up, i. e., either as illustrated in Fig. 6, or with each channel brick in reversed position. The horizontal mortar courses 38 and the vertical mortar courses 39 are interrupted by the central air spaces 37^a, 37^a, while the middle mortar course 40 is similarly isolated by the air spaces 37^a, 37^a. In this form the lugs 35 or one or more of them may be readily clipped off by a trowel when it is desired to fit the brick as at corners, piers, or the like, with common brick crossing the same, the exposed faces of my type of brick being preferably of standard brick size as is well known in this particular art of channel brick construction. I am aware of the present types of channel brick now generally employed, but these channel brick either rely upon a relatively large single central air space or a narrow insecure and objectionable hand-hold, which also is not load bearing, and my present invention is particularly directed to obviate the difficulties of such prior channel brick constructions. The small narrow hand-hold, particularly, is highly objectionable, and any narrow weblike projection which the mason must rely upon to seat, settle, or force the brick down into place in its mortar bed is tiresome, wearing, and results in fatigue and, of course, is unsuited for pressure applying through the hand of the mason in forcing so large a building unit as a channel brick extending the entire width of the wall into alinement and position. My invention provides a broad hand hold in the central member, which member is also a load-carrying and strengthening means in the wall. A further advantage in my wall is that I provide the plurality of air spaces, as should one air space be accidentally filled up with mortar by a careless mason, the moistureproofness of my wall is still retained, whereas in prior constructions relying upon a single central air space, the filling of such central space with mortar would completely destroy the moisture-proofness of that mortar course. It will also be manifest that an important advantage is present in my wall structure by forming the plurality of wall sections as hollow members, preventing useless employment of mortar, and limiting the mortar courses to small even ribbons or strips, which can be quickly and evenly laid by the mason along the top of each wall section,

or in case the blocks are built in inverted order, these mortar ribbons would be laid along the appropriate spaces on the body portions 1 or 30, as will be readily appreciated.

My invention is further defined and described in the form of claims as follows:

1. Channel brick of the kind described, comprising a connecting body portion having formed thereon three vertically extending wall sections of equal length, each section being cored and producing with said body portion two open channels the exposed faces of the outer wall sections being of standard brick size.

2. Channel brick of the kind described, comprising a connecting body portion having formed thereon three vertically extending wall sections of equal length, each of said vertically extending wall sections being of greater width than the intervening open channels.

3. Channel brick of the kind described, comprising a connecting body portion having formed thereon three vertically extending hollow wall sections, each of said vertically extending wall sections being of greater width than the intervening open channels and the exposed faces of the outer wall sections being of standard brick size.

4. Channel brick of the kind described, comprising a connecting body portion having formed thereon three vertically extending wall sections, each section being cored and producing with said body portion two open channels, each of said wall sections being of greater width than the intervening open channels and having the exposed faces of the outer wall sections substantially equal in area to standard brick size.

5. Channel brick of the kind described, having a horizontal body portion and a plurality of hollow wall sections extending at right angles therefrom on the same side, said sections being parallel with each other, an inner hollow wall section on said body portion and having substantial width to constitute a hand hold with a broad bearing top surface the exposed faces of the plurality of hollow wall sections being of substantially brick size.

6. Channel brick of the kind described, comprising a horizontal connecting body portion and a plurality of vertically extending cored members, an inner member having mortar receiving grooves to provide an interlock with the mortar course applied thereon.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

HARRY P. BARR.

Witnesses:

FRED DEGAR,
W. C. SMITH.